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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/679,537	10/02/2003	Mitchell H. Maiman	1422	3988

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EXAMINER	
TRAIL, ALLYSON NEEL	
ART UNIT	**PAPER NUMBER**
2876	

DATE MAILED: 11/02/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 10/679,537	Applicant(s) MAIMAN, MITCHELL H.	
	Examiner Allyson N Trail	Art Unit 2876	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *30 July 2004*.
2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.
3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-10* is/are pending in the application.
  4a) Of the above claim(s) _____ is/are withdrawn from consideration.
5)☐ Claim(s) _____ is/are allowed.
6)☒ Claim(s) *1-10* is/are rejected.
7)☐ Claim(s) _____ is/are objected to.
8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.
10)☒ The drawing(s) filed on *02 October 2003* is/are: a)☒ accepted or b)☐ objected to by the Examiner.
  Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
  Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
  a)☐ All b)☐ Some * c)☐ None of:
    1.☐ Certified copies of the priority documents have been received.
    2.☐ Certified copies of the priority documents have been received in Application No. _____.
    3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
  * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
  Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413)
  Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Amendment

1. Receipt is acknowledged of the Amendment filed July 30, 2004.

Remarks

2. In the previous office action dated May 4, 2004, claims 1-7 were rejected under 35 U.S.C. 102(b) and claims 8-10 were rejected under 35 U.S.C. 103(a). The current amendment has further limited independent claims 1 and 9.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

4. Claims 1-7 are rejected under 35 U.S.C. 103(a) as being unpatentable over Wang et al (5,572,006) in view of Kim et al (2004/0132491).

Wang et al teaches the following in regards to claim 1:

An image capture device for electro-optically reading indicia 10, comprising a housing 18 and having a light-transmissive window (although it's not specifically pointed out in the figures, the barcode reader must have a light-transmissive window in order for the barcode to be read). The device further comprises an imaging module 20, located within the interior of the housing. The imaging module 20 has an array of spaced-apart sensors for detecting light reflected from the indicia, "As noted, sensor array assembly 20 may include a two-dimensional array 21 of sensing cells (each utilizing a photodiode and responsive to incident reflected light)." (Col. 5, lines 38-40). The device also includes an internal light source for providing background illumination 22. External lighting 50 is mounted on the device to generate a brightly illuminated area, "Perimeter illuminators, such as shown at 50, are positioned in a frame type configuration and arranged to illuminate the target area with a border or frame effect which indicates the field of view of the sensor array assembly 20." (Col. 4, lines 59-63).

Wang et al teaches the following in regards to claim 2:

Figures 1B and 1C show a keyboard 40 and a display 42.

Wang et al teaches the following in regards to claim 3:

"In FIG. 3, 56 represents an outline of the array focusing lens and 21a represents the outline of an array of sensing elements included in sensor array assembly 20. At 21b is indicated a linear sensor which may comprise one or two rows of sensor elements provided separately from the element array 21a." (Col. 6, lines 23-28).

Wang et al teaches the following in regards to claims 4 and 7:

"Each of the illuminators may be an appropriate form of device, such as a low cost light emitting diode (LED), arranged to provide the respective levels of illumination determined to be appropriate in applications of the invention." (Col. 5, lines 6-10).

Wang et al teaches the following in regards to claim 5:

"In FIG. 2, the sensor array is focused, via lens 56, on target area 58 which is at a distance 59 from lens 56." (Col. 6, lines 1-2).

Wang et al teaches the following in regards to claim 6:

As can be seen in figure 1A, the external lighting includes a pair of external light sources flanking the window. For example the perimeter illuminators 50 are adjoining the window.

Wang et al fails to specifically teach the external lighting mounted on the exterior wall of the housing.

Kim et al teaches the following in regards to claims 1-7:

FIG. 17 shows a sectional view of a camera module for mobile communication terminals. The camera module comprises: a housing 111 having a space 112 defined therein; a camera lens 113 disposed to the upper part of the housing 111 for focusing an image of a subject; an image capture device PCB 115 adapted for supporting the housing 111, the PCB 115 having an image sensor 114 for capturing the image of the subject mounted to the middle upper surface thereof; at least one LED 120 disposed on the PCB 115 outside the housing for emitting light to the subject; and a connector unit 116 for applying an electric signal to the PCB 115.

In view of Kim et al's teachings it would have been obvious to one of ordinary skill in the art at the time the invention was made to use the structure of the camera taught by Kim et al, with the image capturing device taught by Wang et al. Both Kim et al and Wang et al have the same functionality and both use additional lighting for illuminating the indicia when light levels are low. Kim et al however places the additional lighting on the exterior of the housing. Not having the additional lighting external to the housing may cause an interference to the sensor array. Wang uses a filter to avoid the interference. One would be motivated to place the light emitting diodes on the exterior of the housing in order to reduce the number components needed for a successful reading. Additionally, being on the exterior of the housing, the LEDs may easily be replaced if needed.

5. Claims 8-10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Wang et al (5,572,006) in combination with Kim et al (2004/0132491) and in further view of Roustaei (6,347,163).

Wang et al's teachings in combination with Kim et al's teachings are discussed above.

Although the combination teaches using an ambient light spectrum, Wang et al and Kim et al fail to specifically teach detecting the ambient illumination and energizing the external light when the detected ambient illumination is below a threshold level.

Roustaei teaches the following in regards to claims 8-10:

"In many applications, ambient light may be sufficient for illuminating the target to permit the detector to generate a high quality image signal, however, in low light conditions, the same detector may need a light source to supplement the ambient light. To determine whether supplemental light is needed, the photodiode or phototransistor can be located close to the detector to determine how much light is actually impinging upon the detector. The output of this photodetector is amplified and converted to a digital signal, then fed to the scanning device's controller to control the amount of supplemental illumination provided by the LED light sources." (Col. 3, lines 7-18).

"If the illumination provided by the ambient light is sufficient for the image detector to generate a clear image signal, there will be no need to activate the LEDs for supplemental light. A threshold for minimum light intensity required by the image detector will be translated to a threshold voltage level from the photodetector 203, so that the controller can establish the need for supplemental illumination prior to the scan based upon the signal from the photodetector 203." (Col. 6, lines 24-32).

In view of Roustaie's teachings it would have been obvious to one of ordinary skill in the art at the time the invention was made to use an ambient light detector in combination with the image capturing device taught by Wang et al in combination with Kim et al. It is well known in the art that ambient light affects the ability to successfully read a barcode. When the ambient light level is adequate for a successful read there is no need to use the light emitting diodes. However if ambient light level is poor, the diodes are needed to read successfully. One would be motivated to include a sensor and a control unit for assessing the ambient light level and activating the LEDs only if necessary. The control unit would cut down on power required to energize the light sources.

Response to Arguments

6. Applicant's arguments found on page 1 of the remarks, filed July 30, 2004, with respect to the rejections of claims 1-10 have been fully considered. In view of the current amendment, the examiner agrees with the applicant's argument regarding Wang et al failing to teach the external lighting mounted on the exterior wall of the housing. However, the examiner believes that Wang et al does teach the lighting projecting past the window. Wang et al teaches providing supplemental illumination of the object if the lighting conditions are too low. The lighting used to further illuminate the object projects

past the window and onto the object. The current amendment specifies that the external lighting is mounted on the exterior wall of the housing. Upon further consideration, a new grounds of rejection is made in view of Wang et al and in further view of Kim et al (2004/0132491). Kim et al teaches a light emitting diode disposed outside the housing for emitting light onto the subject.

7. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL.** See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Conclusion

8. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure: Kricorissian (2003/0071121), Roxby (5,585,616), Tanaka et al (2004/0175026), Hofflinger et al (2004/0135912), and Reichenbach et al (2004/0026509).

9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to *Allyson N. Trail* whose telephone number is (571) 272-2406. The examiner can normally be reached between the hours of 7:30AM to 4:00PM Monday thru Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Michael G. Lee, can be reached on (571) 272-2398. The fax phone number for this Group is (703) 872-9306.

Communications via Internet e-mail regarding this application, other than those under 35 U.S.C. 132 or which otherwise require a signature, may be used by the applicant and should be addressed to [**allyson.trail@uspto.gov**].

All Internet e-mail communications will be made of record in the application file. PTO employees do not engage in Internet communications where there exists a possibility that sensitive information could be identified or exchanged unless the record includes a properly signed express waiver of the confidentiality requirements of 35 U.S.C. 122. This is more clearly set forth in the Interim Internet Usage Policy published in the Official Gazette of the Patent and Trademark on February 25, 1997 at 1195 OG 89.

Allyson N. Trail
Patent Examiner
Art Unit 2876
October 26, 2004

Jared J Fureman
JARED J. FUREMAN
PRIMARY EXAMINER